

— TO THE — Festiniog Urban District Council

MR. CHAIRMAN AND GENTLEMEN,—

I have the honour of presenting the following Report for your consideration for the year ending 31st December, 1905:—

AREA AND POPULATION.—The Area of the District (exclusive of that covered by water) is 16,323 acres, and the estimated population for the middle of the year 1905 is 11,650, an increase of 72 as compared with 1904.

Fifty six plans of new houses were passed in 1904, and these have now been occupied. Multiplying this number by 5 we have an increase of 280 in the population; but a large number of workmen have left the District during the latter months of the year, and overcrowding has also been greatly reduced, so that the estimate of 11,650 is fairly correct.

BIRTH RATE.—During the year 364 births were registered (Table I.), a decrease of 5 as compared with 1904. The Birth Rate for the year was 31·24 per 1,000 of the population. This compares very favourably with the corresponding rate throughout England and Wales, which was 27·9 per 1,000, that of the 142 smaller towns being 27·5, and that of Rural England and Wales 26·8.

The average Birth Rate of the District for the last 10 years is over 31 per 1,000 of the population. (Table IX.)

A comparison of Tables I. and II. will show that 181 females were born and 110 died, whereas 180 males were born and 152 died. The increase of the number of births over deaths was thus nearly three times as great in females as in males, viz., as 74 to 28.

TABLE I.
Births during 1905.

Months.	Males.		Females.		Total.	Total for 1904.	
January	16	...	11	27	...	30
February...	...	9	...	15	24	...	26
March	12	...	13	25	...	29
April	5	...	21	26	...	33
May	17	...	14	31	...	30
June	16	...	11	27	...	36
July	30	...	29	59	...	33
August	13	...	12	25	...	28
September	...	20	...	11	31	...	30
October	13	...	13	26	...	34
November	...	20	...	14	34	...	31
December	...	9	...	20	29	...	29
TOTAL	...	180	...	184	364	...	369

DEATH RATE.—Two hundred and sixty two deaths were registered during the year as compared with 164 for 1904, an increase of 98.

The Death Rate for the year was 22·40 per 1,000 of the population, that of 1904 being 14·4.

Throughout England and Wales the corresponding rate was 16·2 per 1,000, that of English Urban Districts being 15·6.

This is the highest Death Rate registered in any year since 1896, when it was 24·37 per 1,000 (Table III.)

CORRECTED DEATH RATE.—Two persons died within the District not belonging to it, and five persons died at the Festiniog Union Workhouse who belonged to the Festiniog District. We thus have to place the actual number of deaths as 265. This gives us a corrected Death Rate of 22·74.

AGE PERIODS.—Particulars of deaths in the six age periods are all found in Table XI. It is important to note that only 3 deaths were registered in the District during the year, in the school age, five and under 15 years.

In my Report for 1904, I attributed the low Death Rate of that year and the low average for the previous 9 years to—

1. Improved sanitary conditions generally.
2. Improvements in the Water Supply.
3. Absence of Epidemic Diseases, and the better control of Epidemics when they appear in the District.

Unfortunately, during 1905 Epidemic Disease, viz., Influenza and Measles were the chief cause of the great increase of the Death Rate.

I wish to call your special attention to—

1. Influenza and its common complications.
2. Measles and its complications.

With Measles I shall deal at some length, hoping that the lessons of the Epidemic may be carried home to parents and guardians throughout the District.

INFLUENZA.—This Disease made its appearance in Epidemic form in January. The type of disease was virulent, and the complications serious. Hundreds of the inhabitants were attacked—both young and old. The Elementary Schools of Tanygrisiau and Glanypwll School Districts had to be closed on this account, mainly because the attendance at the schools had fallen as low as 30 or 40 per cent. This had no effect on the epidemic which went its course carrying with it its victims.

Six deaths from Influenza were registered and fifty two (52) deaths from Bronchitis, Pneumonia, and Pleurisy had to be recorded; fully three-fourth of these deaths taking place during the first six months of the year.

Influenza is intensely infectious,—caused by a germ or bacillus which, under suitable conditions, such as hot, moist, and polluted atmosphere, multiplies by the million. This attacks those who are exposed to the germ, and the consequences are serious, as evidenced by the 35 deaths from Pneumonia alone that were registered. (Table XI.)

As already stated the closing of the schools was of little avail as the children—particularly the elder ones—congregated in vestries and places of worship when the atmospheric conditions were less satisfactory even than in the schools. Chapels, churches, and vestries were filled by adults and children from six in the evening till midnight, and even later than this, no thought being given to the existing atmospheric conditions, and no attempt made to purify the same.

This I have no doubt is mainly responsible for the virulent and persistent form of Influenza that attacked the majority of the inhabitants during the first half of the year.

Pneumonia always has its victims in the District, but the number of deaths during 1905 (from this disease) was about four times the average.

The same may be said of Bronchitis.

TABLE II.
Deaths during 1905.

Months.	Males.	Females.	Total.	Total for 1904.
January ...	24	9	33	13
February...	18	17	35	20
March ...	16	7	23	19
April ...	10	16	26	14
May ...	17	9	26	16
June ...	8	10	18	11
July ...	13	10	23	10
August ...	6	4	10	12
September	7	4	11	12
October ...	18	13	31	16
November	7	6	13	11
December	8	5	13	10
TOTAL	152	110	262	164

To some these remarks may appear out of place; be this as it may, there can be no doubt that the conditions referred to had a great deal to do with the continued prevalence of Influenza and its complications in our midst, and that to derive the greatest blessing from Public Worship, the same must be carried out under strict sanitary condition.

In Table III. we have a careful record of the Birth Rate, Death Rate, Zymotic Rate, &c., for the last ten years. The Death Rate record is very interesting.

In 1896 we had a severe epidemic of Measles with 37 deaths,

and the Death Rate was as high as 24·37 per 1,000, and in 1905 we have Influenza and Measles with the high Death Rate of 22·40.

The Rate for the intervening years is under 20 per 1,000 in each year, and has been as low as 15·70 and 14·40 per 1,000 per annum.

TABLE III.
Statistics 1896–1905

Years.	Birth Rate.	Death Rate.	Zymotic Rate.	Diphtheria Rate.	Infant Mortality.	Aged Persons.
1896 ...	31·67 ...	24·37 ...	5·33 ...	0·38 ...	250 ...	3·7
1897 ...	33·50 ...	19·08 ...	1·50 ...	0·41 ...	164 ...	3·5
1898 ...	33·60 ...	18·90 ...	1·70 ...	0·16 ...	199 ...	3·5
1899 ...	31·60 ...	17·80 ...	1·13 ...	0·08 ...	145 ...	3·2
1900 ...	30·20 ...	15·70 ...	0·73 ...	0·08 ...	126 ...	4·0
1901 ...	32·10 ...	18·70 ...	1·04 ...	0·08 ...	173 ...	4·6
1902 ...	28·70 ...	16·50 ...	0·60 ...	0·08 ...	130 ...	3·1
1903 ...	30·10 ...	18·30 ...	3·21 ...	1·10 ...	152 ...	3·5
1904 ...	31·80 ...	14·40 ...	0·43 ...	0·17 ...	143 ...	2·7
1905 ...	31·24 ...	22·40 ...	2·50 ...	0·26 ...	191 ...	4·1

INQUESTS.—The following Inquests were held during the year. Seven of the deaths were due to accident, two to suicide, and one to syncope.

ACCIDENTS—

Quarry Accidents ...	...	...	...	5
Accidentally drowned ...	...	...	...	1
Suffocation ...	...	...	...	1
Syncope ...	...	...	...	1*
Total ...	...	...	...	8

SUICIDE --

Drowning... ..	...	...	...	2
TOTAL ... ..	...	...	...	10

* The death from Syncope is included under Heart Disease. (Table XI.)

There was an increase of one in the fatal Quarry accidents as compared with 1904. Two of these were workmen who resided outside the District.

ZYMOTIC DEATH RATE.—From the seven principal Zymotic Diseases 29 death were registered, viz., Measles 22, Diphtheria and Membranous Croup 3, Whooping Cough 2, Continued Fever 1, and Diarrhoea 1.

This gives us a Zymotic Death Rate of 2·50 per 1,000 of the population as compared with 0·43 for 1904.

The chief cause of the increase is the large number of deaths from Measles.

Diphtheria and Membranous Croup are grouped together. The case mortality in these diseases was 4·8 per cent. This may be considered low and compares very favourable with previous years. I believe that Anti Diphtheretic Serum is now invariably used in

all pronounced cases by all the medical men of the District. There was one death from Continued Fever. No death from Enteric Fever was registered, neither was any case of the disease notified. The District has been entirely free from Enteric Fever for the last fifteen years, thanks to our excellent water supply and improved sanitary conditions generally. This is a very important fact in the sanitary history of the District. Prior to the obtaining of our present water supply, Enteric Fever was endemic, the average number of deaths per annum for the ten years 1865--76 was over 12 representing at least the existence of 120 cases a year during this period. I call attention to this as showing what can be done to safeguard the Public, and render it impossible for the germs of such a disease as Enteric Fever to exist.

Diphtheria is a disease, death from which have to be annually recorded. Our efforts to stamp out the disease have not been crowned with great success, though we can show great improvement as compared with previous years. Something more is required. Isolation is absolutely necessary before we can hope to succeed. In the absence of an Isolation Hospital this is well nigh impossible in a large industrial centre like Festiniog.

Throughout England and Wales during 1905 the Zymotic Death Rate was 1.94 per 1,000 of the population. This rate, in what may be called English Urban Districts, being 2.02.

In the fourth column of Table III. we find the Zymotic Rate for the District during the last 10 years. In 1896 the rate was 5.33; 1903, 3.21; 1905, 2.50. In these years we had severe epidemics of measles. Apart from these years our rate has been much below the average throughout England and Wales,

One death from Diarrhœa was registered, and in addition to this nine deaths from Enteritis were also registered, eight of the latter being among children under one year of age. (Table IX.) Enteritis in infants is usually caused by error in diet; giving the child unsuitable food. This fact should be known to all mothers throughout the District.

Every year I call attention to the difficulties of rearing children artificially, viz., with cow's milk or any of the prepared foods, and to the importance of giving every child its own mother's milk: nothing but disease or illness should induce any mother to depart from this practice.

MEASLES.

Having been requested by the Local Government Board to prepare a Special Report of the recent Epidemic of Measles, I beg to submit the following facts and figures relating to the same, and to call your attention again to the importance of Isolation and Prevention in the treatment of Measles as well as all Infection Diseases.

Measles is not a notifiable disease in the District. This fact renders it difficult to know with any degree of certainty the number of cases that occurred during the year.

Through the kindness of Mr. William Evans, the Attendance Officer for the School District, I have been able to include a table showing the number of cases among children attending our Elementary Schools.

HISTORY.—In May, 1905, a woman and her three children came to Blaenau Festiniog from South Wales. Two days after their arrival two of the children developed Measles. It is known that these children had been in contact with other children after coming to the District, and that in about 10 days other cases of Measles made their appearance among the children thus exposed.

The first cases (two children from South Wales) made their appearance in Cwmorthin Ward. There was a rapid increase in the number of cases, the disease being of a bad type, and in the absence of notification and Isolation it spread with great rapidity.

Altogether there were about 128 cases among children of school age in the Tanygrisiau School District. The schools were closed for 4 weeks mainly on account of the reduced average attendance.

Glanypwll School District was the next attacked. The number of cases (as near as can be stated) among children of school age being 172. Here again the schools were closed.

In the Slate Quarries School District the epidemic spread with great rapidity, 182 cases making their appearance among school children.

In the Manod District 227 cases (of school age) were recorded. The type was more malignant and complication more common and severe.

After the Manod School District was attacked there was a short interval (few weeks) before the disease made its appearance in the Festiniog School District, due no doubt to the distance (about $2\frac{1}{2}$ miles) between Conglywal and Festiniog.

Festiniog School District was the last invaded, the number of cases being 202.

The schools had to be closed in all the districts as the disease made its appearance.

In Festiniog we still (January 1906) have cases of the disease.

Tanygrisiau was the first attacked, and Festiniog the last. The infection spreading along the main line of the houses and of the population. Tanygrisiau and Festiniog stand West and South respectively at the end of a horse shoe, the concavity facing South-West.

The distance from Tanygrisiau to Festiniog (as the crow flies) is not more than $1\frac{1}{2}$ miles, whereas along the line of the houses and population, and the route followed by the epidemic, the distance is a little over 5 miles.

TABLE IV.

Measles—Epidemic 1905-6.—Children of School age attacked.*

NAME OF SCHOOL.	STANDARDS.					TOTAL.
	I.	II.	III.	IV.	V.	
Tanygrisiau—Boys	9	10	5	2	1	27
Do. Girls	9	3	4	5		21
Glanypwll—Boys	14	14	12	6	1	47
Do. Girls	15	15	7	4		41
Slate Quarries—Boys	18	13	2	3	1	37
Do. Girls	10	20	6	5		41
Manod—Mixed	44	29	14			87
Festiniog do.	23	21	21	13	20	98
TOTAL	142	125	71	38	23	399
			Llan	Glanypwll	Manod	
Festiniog Advanced—Boys			6	3	1	10
Higher Grade—Girls			3	4		7
	142	125	80	45	24	416
INFANTS.						
Tanygrisiau				51	29	80
Glanypwll				49	28	77
Slate Quarries				71	43	114
Manod				91	48	139
Festiniog				51	44	95
TOTAL				313	192	505

* Prepared by Mr. William Evans, Attendance Officer.

CASES-NUMBER.—From Table IV. we find that the total number of children (attending the Elementary and Higher Grade Schools of the district) attacked was 921. This is about 37 per cent of all the children attending the schools.

Of the 921 cases, over 54 per cent were in the Infants Department, and if we include Standards I and II (making 772 cases) we find that over 83 per cent of all the children of school age attacked were, practically speaking, under 8 years of age, this very large majority being, as already stated, among those attending the Infants Schools.

In addition to children of school age, we have about 900 children below school age living in the district at the time of this epidemic.

We have no means of ascertaining the number of these attacked,

but, judging from the age at death of the 22 cases that proved fatal, I should say that fully 50 per cent of the children residing in the district and under school age were attacked.

Roughly speaking, we may safely state that over 1,200 children were attacked with Measles during this epidemic, and that fully three fourths of them were under 6 years of age.

In the Higher Grade Schools with about 240 Scholars, only 17 cases were recorded. The upper Standards of the Elementary Schools also showing the marked lessening in the number of cases, as the children grow older, and the figures for the upper and lower forms of the Infants Schools, which are 192 and 313 respectively, distinctly show the marked protection afforded by age.

CHARACTER OF THE EPIDEMIC.—The first cases that made their appearance were of a severe type, but as the disease spread it became more malignant, particularly among children under 3 years of age. Complications became more frequent, and fatal cases more numerous.

COMPLICATIONS & SEQUELAE.—The complications most frequently met with were affections of the Respiratory and Nervous Systems. In 18 of the 22 fatal cases the complications were as follows:—

1.	Pneumonia	...	...	7
2.	Convulsions	...	...	6
3.	Membranous Croup	...	...	2
4.	Diphtheria .	...	...	1
5.	Hyperpyrexia	...	...	1
6.	Gastritis ...	...	...	1
Total				18

Of the Sequelae, Eye affections, Ophthalmia and Ear affections were the most frequent, deafness in some cases

Thus we find that over 70 per cent of the complications in the fatal cases are from Pneumonia and Convulsions.

DEATHS.—Between June 23, and December 28, 1905, 22 deaths from Measles were recorded in the district, giving a Measles death rate for the year of 1·8 per 1000 of the population. The permissible mortality from Measles may be taken as 0·4 per 1000.

TABLE V.
Deaths from Measles—1905.

N ^o .	Name.	Ward.	Sex.	Age.	Complications.	Date.
1	... E. W.	... Rhw	... F.	... 3 yrs.	... Convulsions	... June 23
2	... D. T.	... Ystradau	... M.	... 11 mths	... Convulsions	... „ 26
3	... W. M. L.	... Ystradau	... M.	... 11 mths	... Convulsions	... „ 27
4	... R. J.	... Rhw	... F.	... 19 mths	... Convulsions	... July 3

No.	Name.	Ward.	Sex.	Age.	Complications.	Date.
5	R. T. R. ...	Bowydd	... M. ...	20 mths	Hyperpyrexia ...	„ 3
6	C. H. J. ...	Bowydd	... M. ...	16 mths	Diphtheria ...	„ 12
7	M. E. V. ...	Bowydd	... F. ...	19 mths	Br. Pneumonia...	„ 20
8	G. A. J. ...	Maenofferen	... M. ...	3½ yrs	Memb. Croup ...	„ 22
9	L. J. ...	Bowydd	... F. ...	14 mths	Convulsions ...	„ 25
10	M. C. J. ...	Rhiw	... F. ...	12 mths	Convulsions ...	„ 25
11	W. W. ...	Diphwys	... M. ...	8 mths	Convulsions ...	„ 26
12	A. K. J. ...	Maenofferen	... F. ...	20 mths	Br. Pneumonia...	Aug. 6
13	T. G. T. ...	Diphwys	... M. ...	15 mths	Pneumonia ...	„ 11
14	J. W. ...	Conglywal	... F. ...	11 mths	Pneumonia ...	„ 13
15	E. A. J. ...	Diphwys	... F. ...	15 mths	Memb. Croup ...	„ 15
16	W. R. ...	Cwmorthin	... M. ...	10 mths	Memb. Croup ...	„ 20
17	M. P. ...	Diphwys	... F. ...	15 mths	Gastritis ...	Sept. 6
18	M. G. W. ...	Conglywal	... M. ...	8 mths	Convulsions ...	Oct. 5
19	M. J. L. ...	Conglywal	... F. ...	18 mths	Pneumonia ...	„ 17
20	L. H. ...	Conglywal	... M. ...	10 mths	Pneumonia ...	„ 21
21	W. O. W. ...	Conglywal	... M. ...	10 mths	Convulsions ...	„ 26
22	D. M. L. ...	Cynfal	... M. ...	16 mths	Pneumonia ...	Dec. 28

Wards.			Wards.		
Ystradau	...	2	Conglywal	...	5
Cwmorthin	...	1	Bowydd	...	4
Rhiw	...	3	Cynfal	...	1
Diphwys	...	4			—
Maenofferen	...	2			22

SEX.—Of the 22 cases of deaths, 12 were male, and 10 female.

AGE AT DEATH.—In Table V, particulars of all the Deaths are given.

Over Two years of age ... 2 (one 3 years and one 3½ years)
Under Two years of age ... 20

Total ... 22

Of the 20 cases, 13 were between one and two years of age, and 7 were under one year of age.

This is an important fact, when we think that among the 2,500 children attending our Elementary and Higher Grade Schools, out of which over 900 were attacked with Measles,—no deaths were recorded.*

Whereas among children below school age, 22 deaths were recorded—Practically speaking, all the deaths were among children under 2 years of age. Taking England and Wales, the maximum mortality from Measles among children is in the second year of life. This epidemic bears this out; but the remarkable fact still remains, viz :—That of the 900 school children attacked, not one died; the case mortality being nil.

The case mortality was very high indeed among children under two years of age.

As already stated, the epidemic was of a severe type, and notwithstanding the fact that it was at its height during the

*The child aged 3½ years may be an exception—of this, I am not quite certain.

summer months, when chest complications are least likely to occur, we had 8 deaths in the month of July, five in August, and three in June. (Table V.)

<i>School Districts.</i>	<i>Ward.</i>	<i>Deaths.</i>	<i>Population (1901)</i>	<i>Rate per 1000.</i>
Tanygrisiau ...	Cwmorthin & Ystradau	3	1772	1.6
Glanypwll ...	Rhiw & Bowydd ...	7	3435	2.0
Slate Quarries...	Maenoffern & Diphwys	6	2975	2.0
Manod ...	Conglywal ...	5	1732	2.8
Festiniog ...	Teigl & Cynfal ..	1	1460	0.6

This Table again shows that the epidemic increased in severity and malignancy as it successively attacked the different school districts. The distance of Festiniog from Conglywal and the interval in the appearance of the epidemic together with less malignancy at the former school districts accounts for the lower rate of mortality at Festiniog.

CONCLUSIONS AND LESSONS.—1. That the disease was imported from South Wales.

2. That the type of disease was bad—malignancy increasing as the epidemic attacked successive school districts.

3. That in the absence of notification, it is impossible to check the spread of the disease when it first makes its appearance.

4. That more can be done by parents and Guardians as regards the proper insulation of cases of measles: the tendency being to put all the children together, young and old, and to make no attempt to isolate those attacked.

5. That school attendance was the chief channel through which the disease spread.

6. That the closing of the schools does not appear to be of much good in checking an epidemic of measles. The initiatory symptoms are like those of an ordinary cold, and it is during the early stage that the disease is most infectious.

7. That nervous and chest complications are the most common, and also the most fatal.

8. That equable temperature and free ventilation are most important factors in the successful treatment of measles.

9. That the notification of measles is desirable—more particularly the first cases that make their appearance in the District. This might assist in checking the spread of the disease.

10. That measles is most fatal when it attacks children in the first and second year of life.—Practically, all the deaths during this epidemic were among children under two years of age (*vide ante*).

11. That the most susceptible to be attacked during epidemics of measles are children under 4 years of age.

12. That as a child grows older, the chances of his contracting the disease grow less, and the probability of his recovering when attacked is increased.

13. That it is the duty of all parents and guardians to do all in their power to keep their children from contracting the disease.

14. That each successive year of life undoubtedly protects the child against measles, and increases the chances of recovery when attacked.

15. That of 921 school children attacked during the epidemic of 1905, not one died.

16. That all the deaths were among children under $3\frac{1}{2}$ years of age.

SCARLET FEVER.---No deaths from Scarlet Fever were registered during the year. Fifteen cases were notified, all of a mild type.

DIPHTHERIA AND MEMBRANOUS CROUP.---Three deaths from these diseases were recorded. Sixty two cases were notified during the year. This gives a case mortality of 4.8 per cent. A very low rate.

PHTHISIS.---During the year, 21 deaths from phthisis or pulmonary tuberculosis were registered, giving a phthisis death rate of 1.8 per 1000 of the population. The rate for 1904 was 1.7. Eleven deaths from other tubercular diseases were registered.

In my Report for 1904 I call special attention to the main causes regulating the spread of this disease.

The Tubercle Bacillus is mainly disseminated by means of dried sputum, those coming in contact with it becoming infected.

INFANT MORTALITY.---Seventy deaths among infants under one year of age were registered during the year; The Infant Mortality rate being 192 per 1000 registered births, as compared with 143 for 1904, and an average of 164 for the nine years 1896—1904.

The rate of Infant Mortality throughout England and Wales during 1905 was 146, that of English Urban Districts being 154.

TABLE VI.
Deaths of Infants—1905.

MONTHS.	Males	Females	TOTAL.
January	9	3	12
February	4	5	9
March	3	2	5
April	3	5	8
May	3	3	6
June	5	2	7
July	4	1	5
August	2	2	4
September ... ..	...	...	...
October	6	3	9
November... ..	2	1	3
December	1	1	2
TOTAL	42	28	70

The main causes of the increased infant mortality rate were the deaths from measles, enteritis, pneumonia, and the large number (11) of children that died, the cause of death being stated as Premature Birth.

These latter deaths may have been indirectly caused by the Mothers having suffered from influenza with some of its complications, as we find that eight of the eleven deaths took place during the first five months of the year, Influenza being at the time epidemic in the district (Table VII). The same may also be said of the large number of deaths from Chest Affections during the first five months of the year.

In Table VII we have a classification of the causes of death among the 70 infants that died.

TABLE VII.
Infant Mortality—Cause of Death.

MONTHS.	TOTAL	Chest Affections	Alimentary Affections	Nervous Diseases	Suffocation	Premature Birth	Measles	Whooping Cough	General Diseases
1st	12	8				1			3
2nd	9	2		2		2			3
3rd	5	2		1		1			1
4th	8	1	3			3			1
5th	6	1	1	1		1			2
6th	7			2			2	1	2
7th	5			4			1		
8th	4		2				2		
9th	No	deaths							
10th	9		1	1		3	3		1
11th	3		1	1	1				
12th	2		1	1					
TOTAL	70	14	9	13	1	11	8	1	13

No deaths among infants under one year of age were registered during the month of September (Table VII).

NOTIFICATION OF INFECTIOUS DISEASE.—The following Table gives particulars of the notifications during the year, and also for 1904. Full particulars as to age &c., will be found in the Notification Table at the end of this report.

DISEASES.	1905	1904
Diphtheria ...	56	45
Membranous Croup ...	6	12
Erysipelas ...	26	21
Scarlet Fever ...	15	31
Continued Fever ...	1	1
Puerperal Fever ...	1	1
TOTAL ...	105	111

We thus find that there was a decrease of 6 cases as compared with 1904. Of the 26 cases of Erysipelas notified, not one died. The cases of Puerperal and Continued Fever both proved fatal.

HEART AFFECTIONS.—Twentyfour deaths from affections of the circulatory system were registered during the year, giving a rate of mortality of 2.0 per 1,000 of the population. This is a very high rate.

In the following Table particulars are given of all the deaths as regards, sex, age, occupation and locality.

TABLE VIII.

Heart Affections—Deaths during 1905.

Name	Ward.	Sex	Age	Occupation.
H. R.	Rhiw	M.	72	Quarry Labourer.
D. R.	Maenofferen	M.	61	Engine Fitter.
J. E.	Rhiw	M.	54	Milk Vendor.
E. A.	Maenofferen	F.	21	Porter's Wife.
J. W.	Bowydd	M.	75	Quarry Labourer.
M. Th.	Maenofferen	F.	66	Wife of Railway Contractor.
E. W.	Cynfal	F.	80	Wife of Licensed Vit.
M. J.	Maenofferen	F.	47	Grocer's Wife.
E. O. J.	Maenofferen	M.	12 mths	
A. E.	Conglywal	F.	73	Farmer's Wife.
S. M. W.	Maenofferen	F.	76	Widow of Slate Quarrier.
J. D.	Cynfal	M.	67	Slate Quarrier.
C. J.	Conglywal	F.	86	Wife of Slate Quarrier.
E. E.	Cynfal	M.	71	Slate Quarrier.
T. J.	Conglywal	F.	56	Wife of Slate Quarrier.
B. J. W.	Maenofferen	M.	28	Solicitor's Clerk.
O. E.	Ystradau	M.	62	Slate Quarrier.
E. A. E.	Diphwys	F.	48	Surgeon's Wife.
R. W.	Ystradau	M.	77	Slate Quarrier.
J. G.	Diphwys	F.	53	Wife of Slate Quarrier.
W. D.	Maenofferen	M.	4 weeks	
M. D.	Diphwys	F.	70	Wife of Slate Quarrier.
E. E.	Bowydd	F.	72	Wife of Slate Quarrier.
G. J.	Rhiw	M.	25	Chemist.

Rhiw ...	..	3	Bowydd ...	...	2
Maenofferen	8	Cynfal	3
Diphwys	3	Ystradau	2
Conglywal	3			

SEX.

Males	12	Females	12
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OCCUPATION—MALES.

Employed at the Quarries	7
Other employment	5

Many causes contribute to this high death rate from Heart Affections, such as, attacks of Rheumatic Fever with Cardiac Complications resulting in Chronic Heart Disease. Conditions of employment in the metaliferous Slate Mines of the District. Dampness of dwelling houses. Up to fifteen years ago no care was taken as regards the provision of damp courses and concrete basement in new houses built, the consequence being that the older houses are damp; in addition to this, a large number of the quarrymen and

their families are content to live in the smallest rooms—often the back-kitchen—and to sleep in the most badly ventilated room in the house, the best rooms being kept simply to look at.

I have often referred to the question of excessive tea drinking. This undoubtedly injuriously effects the heart both directly and indirectly through the digestive system. A large number of the quarrymen suffer from functional affections of the heart in many cases brought about by the excessive use of Tobacco. Those who chew Tobacco all day long cannot but suffer, and I consider that the unseemly habit of Cigarette smoking, which we find among our young people and even among children cannot but permanently weaken their hearts and render them less able to withstand the ravages of disease, and to fight the battle of life.

Why should young people and even children smoke? Certain it is that were they to realise the serious consequence that may result, we should have fewer juvenile smokers. Major General Baden Powell in replying to a Bolton Schoolboy, who wrote to him with regard to local progress made in connection with the International Anti-Cigarette League said:—"I am very glad to hear that you are reviving the Anti-Cigarette League, as I believe that smoking by fellows who are still growing does them an infinite amount of harm, and those who are sensible don't take up smoking until they are twenty years of age.

Fellows who smoke before that age generally turn out rotters afterwards. They only do it because they think it looks swagger and manly to smoke, but any man who has done any scouting or big game hunting, &c., knows that they are fools, so I hope your league will have a good number of members and every success."

From such authorities as Proff. T. Launder Brunton, we find that in Tobacco leaf we have a substance called Nicotine (a poison) Nicotianin or Tobacco Camphor, resin, gum, and other substances.

The Nicotine is the substance that injuriously affects the system, particularly in young people.

It first of all stimulates, and then paralysis the nerves of such organs as the heart, stomach, bowels, and blood vessels. It is in consequence of this action that we have nausea and vomiting and intense prostration resulting from its use. There is paleness of the face, cold sweats, feebleness of circulation and tendency to faint. When the action of Nicotine is carried to extreme, we have excitement, difficulty of breathing, then trembling, convulsions, and death. When the dose is large sudden death may take place from failure of respiration.

Nicotine also affects the spinal cord causing paralysis.

It is on the stomach and circulation that habitual smoking acts, and it is the heart that becomes first affected in juvenile smokers. At first the pulse becomes diminished, and the blood pressure falls then, the pulse becomes slow, and dangerous symp-

toms may appear. Tobacco smoking also acts on the digestive organs, the stomach, liver and bowels, it produces a furred tongue, irritation of the throat, hoarseness, often dyspepsia and irritability of the heart, and produces what is known as the smoker's heart. Sudden faintness may occur, and the sight is impaired by habitual excess in Tobacco smoking.

These are facts, it would be well for young smokers (cigarette smokers) to know, let them understand, that they are undermining their constitution, and that the consequences may be serious.

Three deaths from Rheumatic Fever were also registered

HOSPITALS.—In my report for 1904 I drew special attention to the requirements of the District.

We have no Isolation Hospital, neither have we a Cottage Hospital. This is a great draw back, and a hardship in many a case, particularly accidents at some of the Quarries.

No further steps have been taken towards the provision of a Joint Isolation Hospital for Festiniog and Ynyscynhaiarn Urban and Deudraeth and Glaslyn Rural Districts.

TOWN HALL.—During the year, a poll of the District was taken, the point to be decided being whether or not a New Town Hall was required. The large majority of the inhabitants voted against. I take it that the inhabitants did not at the same time sanction the leaving of the Town Hall in its present insanitary condition.

The Hall is badly ventilated, indeed, no proper attempt has ever been made to ventilate the building, it requires cleaning and renovating. The W. C., in the basement, or Marlet Hall require attention, and the Exits are such that in case of any panic they would be veritable death traps.

PUBLIC BATHS.—At the time of the last election of District Councillors, the question of providing the district with Public Baths was brought prominently before the electors. The candidates most in favour being returned. So far, nothing has been done to provide the District with Baths. All are agreed that they are a necessity; let us hope that some day baths will be provided, and that those of the inhabitants wishing to give their skin a treat will not have to go to Mountain Lakes, (where accidents may and do happen) for the purpose.

WATER SUPPLY.—The supply of the town continues good. During the year the mains have been cleaned and flushed, and the distribution generally has been improved.

The supply being from a Mountain Lake, where the catchment area is mostly peaty ground, the water is at times discoloured and objectionable. The filtering arrangements at the lake are inadequate, and no time should be lost in erecting a duplicate filtering house, were this provided, the chances of the mains getting

again incrustated would be greatly reduced, and the supply would be altogether improved.

DRAINAGE AND SEWAGE DISPOSAL.—The Bacteria Beds of Schemes No I and II are working satisfactorily, minor improvements are required, and great care is necessary in order to get the greatest amount of work out of the Beds.

I am pleased to report that the Council have decided to proceed with the completion of Scheme No. III. The mains are being laid and the plans &c., are ready for the enquiry necessary before the erection of the Bacteria Beds is proceeded with.

The Council have wisely decided to utilise Slate to fill up the Course Beds. This is according to specially laid plans introduced by Mr Dibdin of London.

The Bacteria Beds of Schemes No I and II are filled up with clinkers, and coke.

By substituting slate the capacity of the beds is increased by about 50 p.c., and the material does not require renewal---flushing being the only requirement to restart the bed. The flushing can be done automatically.

The Analysis of the effluent from slate beds is such as to prove beyond a doubt that the bacteriological purification of sewage by means of slate, properly arranged is likely to supercede all other processes now in use.

DEATHS OF AGED PERSONS.---During the year, 48 deaths of persons of 65 years of age and upwards were registered, giving a mortality rate of 4.1 per 1000 of the inhabitants.

FACTORIES AND WORKSHOPS.---We find that there are 109 Workshops on the register, and that 21 have been discontinued, 17 were added during the year.

165 inspections of Factories and Workshops were made during the year, all the necessary notices were served, and all requirements were complied with.

METEOROLOGY.---Through the kindness of Owen Jones, Esq., Manager Oakeley Quarries, and J. Roberts, Esq., The Gardens, Tanybwllch I am able to record the rainfall during 1905 taken at 1,100 ft. and 50 ft. above sea level respectively.

Oakeley Quarries.		Tanybwllch.	
1904	... 91.52 inches	55.94	inches
1905	... 84.33 ,,	55.82	,,

The difference (between the two years) is greater at the 1100 ft. Station.

Rainfall during 1905.

OAKELEY QUARRIES.

Rain Gauge { Diameter of Funnel, Five in.
 { Height { Above Ground, 10 ft.
 of Top { Above Sea Level, 1,100 ft.

Taken at 9 a.m. daily.

Month.	Total Depth.	Greatest Fall in 24 Hours.			Number of Days on which .01 or more fell.
	Inches.	Depth.	D te.		
January	7.53	1.10	11th		17
February	5.44	1.03	16th		14
March	11.42	1.82	8th		22
April	8.43	1.73	28th		20
May	2.84	.71	10th		8
June	4.30	1.08	1st		8
July	6.36	.81	17th		16
August	9.41	1.75	22nd		18
September	5.44	1.85	9th & 10th		13
October	8.30	1.05	25th		14
November	9.73	2.30	22nd		20
December	5.04	.95	6 & 21st		11
TOTAL	84.33				181

THE GARDENS, TANYBWLCH.

Rain Gauge { Diameter of Funnel, Five in.
 { Height { Above Sea Level, about 50 ft.
 of Top { Above Ground, 1 ft.

Month.	Total Depth.	Greatest Fall in 24 Hours.			Number of Days with .01 or more recorded.
	Inches.	Depth.	Date.		
January	4.43	.81	5th		20
February	3.8	.46	25th		24
March	6.97	1.10	10th		23
April	6.30	1.33	30th		19
May	1.39	.41	10th		11
June	2.75	.61	20th		11
July	5.29	.85	22nd		18
August	7.7	1.60	22nd		21
September	3.9	1.50	9th		16
October	6.44	1.15	29th		20
November	6.23	.88	22nd		26
December	2.78	.54	20th		16
TOTAL	55.82				225

SANITARY RECORD.---1905.---Excellent work is being done by Mr Davies the Sanitary Inspector as the following record proves.

1.—No. of Complains received :—

Non-removal of ashes	...	...	71
do. and defective Pails	...	...	37
Defective water fittings and insufficient or no supply of water for Domestic purposes	...	...	204
Other Complaints	...	...	217
TOTAL			529

2.—No. of Houses Inspected : —

Infectious Diseases	...	...	154
House to house Inspection	...	...	207
Farm House do.	...	...	21
TOTAL			382

3.—Notices served for Abatement of Nuisances :—

Drains	...	...	39
Closets	...	...	108
Overcrowding	...	...	2
General Nuisances	...	...	117
Water Notices	...	...	138
Other Notices served	...	...	68
TOTAL			472

In addition to the above 56 letters have been issued with regard to failures to comply with Notices or the improper and incomplete execution of the work specified in the Notices.

4.—No. of new Plans of new buildings passed	...	...	49
5.—No. of new W. C's constructed	...	...	51
6.—" " Pail Closets	...	...	5
7.—" Pail Closets converted to W. C's	...	...	41
8.—" Pails in use December 31, 1905	...	...	204
9.—No. of Isolation Notices served on School Managers	...	...	54
10.—No of Prosecutions	...	...	18

Result of same—

- (a) Ten occupiers of premises were fined 2s. 6c. each without costs for wanton or negligent waste of water supplied to them by the Council.
- (b) Five owners of premises had to pay a similar fine for suffering water fittings to be so out of repair as to cause a waste of water, after receiving notice to repair from the Council.
- (c) 4, Bronrhiw, Dolgarregddu.---Nature of offence: No closet belonging to premises. Result of prosecution; Order of

Court on owner, Mr. Dd. Morris, to provide a proper water closet to the satisfaction of the Council within 28 days, and failing which a fine of 2s. 6d. per day to be imposed, and to pay costs,

- (d) 5, Glynlifon Street.---Nature of offence: Defective and choked water closet drains and dilapidated condition of closet. Result of prosecution: Order of Court on owner and occupier, Mr. John Williams, to abate the nuisance within 7 days to the satisfaction of the Council and to pay costs.
- (e) 6, New Street.---Nature of offence: Dirty condition of the whole premises. Result of prosecution: Order of Court on occupier, Mr William Williams, to cleanse the premises in 3 days, and failing which a fine of 1s. per day to be imposed, and to pay costs.

11.---Five samples of milk were purchased during 1905, and these showed no signs of added water nor extraction of cream.

12.---Yards of Main Drains (Sewers) laid---

Recognised Scheme	...	...	...	660 yards.
Other Drains...	...	...	...	160 "
Drains laid by Private Landlords	...	...	...	350 "
TOTAL				1170 yards.

13.---Plans of New Streets passed, 1.

14.---"Inspection of Workshops." 109 Workshops are at present on the Register. During the year 21 had been discontinued, and 17 added to the Register. 135 visits of inspection have been made during the year to the Workshops (including Bake-houses), and notices have been served for sanitary defects and dirty conditions where such were found to exist.

SLAUGHTER HOUSES.---These are unsatisfactory. Some are at times a nuisance. No remedy is possible short of a Public Slaughter House for the District.

COMMON LODGING HOUSES.---We have no registered common lodging house in the District.

CONCLUSION.---The Birth Rate for the year was very satisfactory, but the Death Rate was the highest recorded during the last nine years. This, as already stated was mainly if not entirely due to the severe epidemic of Influenza in the early part and to Measles later in the year.

The Zymotic Death Rate is high and the Infant Mortality is above the average.

The statistics of the year compare very unfavourably with those of 1904 when the death rate was only 14.4 per 1000 of the population.

The general condition of the district is satisfactory---excellent progress is being made with the drainage---the water supply is good and all care is taken as regards proper scavenging.

Were it not for these visitations of infectious disease Festiniog would stand foremost in its record of health. It has all in its favour. South West aspect, 700 ft. above sea level and yet within three miles of the sea. Protected from North, North East and East winds by a horse shoe range of mountains rising to over 2000 ft. An excellent supply of water and a natural fall of drainage towards the sea. All this will not counteract the evil effects of treating lightly such diseases as measles, diphtheria, and Influenza, ignoring the fact that pure air is absolutely necessary for the maintenance of good health and that over crowding, whether in dwelling houses or in Public Buildings is almost invariably followed by disease and death.

Signed,

RICHARD JONES.

TABLE X.

Cases of Infectious Disease notified during the
Year 1905.

NAME OF DISTRICT—FESTINIOG URBAN.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.					
	At all Ages.	At Ages—Years.				
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65
Diphtheria ...	56	1	9	33	6	7
Membranous Croup ...	6		6			
Erysipelas ...	26	1	1	4	5	15
Scarlet Fever ...	15		4	10		1
Continued Fever ...	1					1
Puerperal Fever ...	1					1
TOTALS ...	105	2	20	47	11	25

TABLE IX.
Vital Statistics of whole District during 1905 and previous Years.
NAME OF DISTRICT—FESTINIOG URBAN.

YEAR.	Popula- tion estima- ted to Middle of each Year.	BIRTHS.		TOTAL DEATH REGISTERED IN THE DISTRICT.				Deaths of Non-residents registered in Public Insti- tutions in the District.		Deaths of Residents regis- tered in Public Institutions beyond the District.		NETT DEATHS AT ALL AGES BE- LONGING TO THE- DISTRICT.	
		Number	Rate.	Under 1 year of age		At all ages.		Number	Rate.	Number	Rate.	Number	Rate.
				Number	Rate per 1000 Births regis- tered.	Number	Rate.						
1896	11240	356	31·70	89	250	274	24·37					274	24·37
1897	12000	402	33·50	66	164	229	19·08					229	19·08
1898	12250	412	33·60	82	199	232	18·90					232	18·90
1899	12350	391	31·60	57	145	221	17·80					221	17·80
1900	12250	371	30·20	47	126	194	15·70					194	15·70
1901	11434	368	32·10	64	173	214	18·70					214	18·70
1902	11479	330	28·70	43	130	190	16·50					190	16·50
1903	11506	347	30·10	53	152	211	18·30	1		3		214	18·60
1904	11578	369	31·80	53	143	164	14·10			4		167	14·40
Average for years 1896—1904	11787	371	31·4	61	164	214	18·1					213	18·0
1905	11650	364	31·24	70	192	262	22·40	2		5		265	22·74

Area of District in acres (exclusive of area covered by water) 16322
 Total population at all ages... .. 11650
 Number of inhabited houses... .. 2572
 Average number of persons per house... .. 4·45

At Census
of 1901.

TABLE XI.
Causes of, and Ages at, Death during Year 1905.
 NAME OF DISTRICT—FLSTINIOG URBAN.

CAUSES OF DEATH.	DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING IN OR BEYOND THE DISTRICT.						
	All Ages.	Under 1 Year.	1 & under 5.	5 & under 15.	15 & under 25.	25 & under 65.	65 & upwards.
Measles	22	8	14				
Whooping Cough	2	1	1				
Diphtheria and Membranous Croup	3		3				
Croup	1		1				
Fever Continued	1					1	
Diarrhoea	1	1					
Enteritis	9	8	1				
Puerperal Fever	1					1	
Phthisis (Pulmonary Tuberculosis)	21				4	16	1
Other Tubercular Diseases	11	2	3	1	3	2	
Cancer, Malignant Disease	9					7	2
Bronchitis	13	6				2	5
Pneumonia	35	7	6		2	16	4
Pleurisy	4				1	3	
Other Diseases of Respiratory Organs	1		1				
Premature Birth	11	11					
Diseases and Accidents of Parturition	3				1	2	
Heart Diseases	24	1			1	8	14
Accidents	7	1			2	4	
Suicides	2					2	
Rheumatic Fever	3				2	1	
Influenza	6				1	3	2
All other causes	72	24	6	2	1	19	20
ALL CAUSES	262	70	36	3	18	87	48

TABLE XII.

FESTINIOG URBAN DISTRICT.

Infantile Mortality during the Year 1905.—Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week.	1 - 2 Weeks.	3-4 Weeks.	Total under 1 Month.	1 - 2 Months.	2 - 3 Months.	3 - 4 Months.	4 - 5 Months.	5 - 6 Months.	6 - 7 Months.	7 - 8 Months.	8 - 9 Months.	9 - 10 Months.	10 - 11 Months.	11 - 12 Months.	Total Deaths under 1 Year.
Certified ... ..	...	14	4	6	24	8	6	2	2	4	2	6	4	3	5	4	70
Uncertified ... ..	...	None															
Measles ... ..	...						1						2		3		8
Whooping Cough ... ..	...																1
Diarrhoea, all forms ... ..	...																1
Gastritis, Gastrointestinal	Catarrah								1	2	1	1		1			8
Premature Birth ... ..	...	9			9	1	1										9
Injury at Birth ... ..	...	1			1												1
Atrophy, Debility, Marasmus ... ..	...	1	1	1	3	1	1	1									5
Convulsions ... ..	...	1	2	2	5	3	2			1	1		1	2			11
Bronchitis ... ..	...					1											6
Pneumonia ... ..	...														1		6
Suffocation, overlaying ... ..	...																1
Other Causes ... ..	...	2	1	3	6	1	1	1		1		1					10
		14	4	6	24	8	6	2	2	4	2	6	3	3	4	3	70

District of Festiniog Urban.—Population: Estimated to middle of 1905, 11,650
 Births in the Year—Legitimate, 349.
 Illegitimate, 15.
 Deaths from all Causes and all Ages, 262.